

WE MAKE THINGS HERE

IDEAS + PRODUCTS + PROFITS

WE MAKE

AEROSPACE AND AVIATION BUSINESSES SOAR

Since World War I, when Northeast Ohio became a major player in producing aircraft engine parts, our region has been integral to aerospace-related industries. Today, aerospace and aviation represents a \$3.2 billion industry in the Cleveland Plus® region, which has become a major hub for aerospace component design, engineering and production. Businesses that locate in Northeast Ohio are supported by R&D, education and training resources, including the NASA Glenn Research Center and the Ohio Aerospace Institute, and join a network of thousands of aerospace manufacturers and suppliers. Source: Economy.com and NASA

OHIO'S INDUSTRY LEADERSHIP

Renowned as the birthplace of aviation, Ohio plays a pivotal role in the national and international aerospace and aviation industries.

- + Ohio is the top global supplier state for OEMs: Airbus (\$6.1 billion), Boeing (\$11.4 billion) and #3 supplier state for Northrop Grumman.
- + 24 major-mission astronauts - John Glenn, Neil Armstrong, Jim Lovell and more - hail from Ohio.
- + Ohio is home to the NASA Glenn Research Center, which boasts the world's largest space systems testing capacity.



SUPPLY CHAIN STRENGTH

Ohio's aerospace and aviation industry is robust, with more than 500 firms plus many more that support the supply chain infrastructure - metal and advanced materials companies, and manufacturers of landing gear, brakes and tires, for example.

Source: Reference USA



OHIO
IS THE
LARGEST
SUPPLIER
IN THE U.S. FOR
OEMs AIRBUS
AND BOEING

Source: Dayton Business Journal

AEROSPACE AND AVIATION

LEADING AEROSPACE, AVIATION AND DEFENSE-RELATED COMPANIES IN OHIO

- + AIRBUS
- + Alcoa
- + Ball Aerospace
- + Belcan
- + BOEING
- + Eaton Corporation
- + Flight Options
- + GE Aviation
- + GrafTech International, LTD
- + Honeywell International, Inc.
- + L-3 Communications
- + LG Fuel Cell Systems
- + LOCKHEED MARTIN
- + Magellan Aerospace
- + Materion
- + Meggitt PLC
- + NASA Glenn Research Center
- + NetJets
- + Nextant
- + Northrop Grumman
- + PARKER HANNIFIN
- + PCC Airfoils, LLC
- + RTI International Metals
- + SAIC
- + Teledyne Continental Motors, Inc.
- + THE GOODYEAR TIRE AND RUBBER COMPANY
- + The Timken Company
- + TransDigm
- + United Airlines
- + United Technologies Aerospace Systems



THE FEDERAL GOVERNMENT
DEFENSE SPENDING ON
AEROSPACE IN OHIO IS

**\$1.1
BILLION**



NASA GLENN RESEARCH CENTER

A global leader in researching and developing innovative technologies for aeronautics and space flight, the NASA Glenn Research Center partners with local and national businesses and collaborates with colleges and universities to further the aerospace industry. Companies that partner with Glenn have the opportunity to leverage NASA brand recognition; a pool of precision-trained employees; inexpensive power, water and land; and a robust multi-mode transportation network.

One of 10 NASA centers, Glenn employs 3,300 scientists, engineers, technicians and administrative and support personnel. Its main campus, located in Cleveland, includes more than 150 buildings and houses wind tunnels, drop towers, vacuum chambers and an aircraft hangar. In Sandusky, Glenn's 6,400-acre Plum Brook Station features unique test facilities, including the world's largest space chamber (featured in Marvel's "The Avengers"), the only test chamber that can permit test firing of upperstage rocket engines and other one-of-a-kind capabilities. Both locations enable NASA, other governmental agencies, and academic and industry partners nationwide to perform specialized research and testing.



OHIO AEROSPACE INSTITUTE

The Ohio Aerospace Institute (OAI) focuses on research and technology development, workforce preparedness and engagement with global networks for innovation and advocacy. It is a joint initiative of the NASA Glenn Research Center, the Air Force Research Laboratory at Wright-Patterson Air Force Base, the state of Ohio, 10 Ohio public and private universities granting doctoral degrees in aerospace-related engineering disciplines, and numerous companies engaged in aerospace activities. The OAI was founded in 1989 to enhance the competitiveness of aerospace companies in the state.

UNIVERSITY SUPPORT

Public and private universities across Northeast Ohio as well as the state are helping build, shape and prepare the aerospace and aviation workforce for tomorrow. These institutions provide specialized programs in engineering, aviation, management, entrepreneurial development and emerging fields such as unmanned aircraft.

STATE SUPPORT

In 2013, Governor Kasich created the Unmanned Aircraft Systems Center with the goal of:

- + Advancing the commercialization of technology through research, design, testing and evaluation, and the subsequent certification of systems or system components.
- + Supporting the Unmanned Aerial Systems (UAS) community in research and development, facilitating safe integration into the National Airspace System (NAS).

There are 25+ college and universities in Northeast Ohio with almost 400 more within a 150-mile radius.

Schools among U.S. News and World Report's Top 25 for Aerospace and Aviation that are within a 300-mile radius of Northeast Ohio include:

Cornell University, Ithaca, New York
Ohio State University - Main Campus, Columbus, Ohio
Purdue University - Main Campus, West Lafayette, Indiana
University of Maryland - College Park, College Park, Maryland
University of Michigan - Ann Arbor, Ann Arbor, Michigan
University of Notre Dame, Notre Dame, Indiana

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